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INTRODUCTION OF THE IRON AGE INTO AMERICA

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Absence of Siderotechny from America

Whatever opinion one may have concerning other materials and arts, it is conceded that aboriginally there was neither smelting of iron nor working by means of it in America. Hematite and perhaps other ores took their places in the Indian economy along with stone and copper, to be battered, rubbed, bored, sawed, and edged; but the fact remains that prior to the invasion of America from the Eastern hemisphere in historic times the native tribes manufactured no iron products and did not use iron as a metal in their industries. They are not now skillful in the manipulation of it. The fence between the purely native America that every ethnologist desires so earnestly to understand and the other America that is always obtruding itself upon the student was wrought of iron.

The American tribes eagerly adopted finished knives, axes, saws, files, needles, cooking pots, arrowheads, lance blades, weapons, and a thousand other inventions in lieu of their own poorer tools and utensils. In accepting the working parts of iron they continued to manufacture the manual parts and the haftings after their own fashions, to cover these with old devices full of meaning, and, in addition, to put their new tools upon the copying of whatever pleased them in the possession of their conquerors. The plasticity of the native American mind and the youth of the race as a whole are demonstrated by the eager-

ness with which the men were ready to leap out of the Stone Age into the Iron Age the very moment an advantage was to be gained. We nowhere hear of a man whose prejudices kept him from wearing a steel hunting knife at his side. The very worst he did was in some instances to buy the iron in hoops and "toes" and break it up and grind it after his own fancy. La Peyrere (1605) says of the Greenland Eskimo:

> They laughed at the gold and silver money which was offered to them and appeared very eager for any articles made of steel; for they like them above everything, and would give whatever they most prized—their bows, arrows, boats, and oars; and when they had nothing more to give they stripped themselves and gave their shirts.[1]

Elimination of Iron-age Products

When a chemist wishes to observe and examine any substance apart, what infinite pains he takes at every step to exclude foreign bodies, to eliminate from the compound everything that is not the object of his search. The physicist, the biologist, the linguist act from the same motive. It is the method of science. There may be occasions when the student aims to understand the compound itself and the method of its aggregation. That inquiry, however, can be made best when the ingredients are understood.

In such manner should be studied the meaning of the phrase "American aboriginal culture." Omit for the present the vexed inquiries whence came the aborigines, how long have they been on this continent, and in what status of culture were they at a given time, and let us try to ascertain what in a few words was their own contribution to culture as a whole, and how much that is called theirs was really theirs. The Iron Age of the Eastern hemisphere must be carefully eliminated, and every object that has the materials and impressions of that age.

The eliminations here spoken of apply to race, to industries, to language, to social structures, to thoughts and beliefs. To get at the pure blood you must eliminate blood; to get at the pure language you must eliminate the foreign words from the Indian tongues and the foreign personal equations of sound and sense from the literature of the languages in foreign books; to get at the pure arts we must eliminate new materials, tools, pro-

[1] Histoire du Groenland, Hakluyt, 1855, p. 219.

cesses, productions, and functionings; to get at the aboriginal society you must eliminate all disturbances by Caucasian interference. The same is true of savage science and religion.

Culture will be taken in this paper to mean the sum of all artificialities of life in the possession of a people, their processes of working and instrumentalities, their activities and organizations, their means of communicating ideas, of enjoyment; their thoughts and worships.

These may have been at any given time fundamentally and altogether new, or they may have been improvements and specialized editions of older works. Native culture includes the fundamentally original, that which a people created and all the idiosyncrasies that have been originated by them.

The adoption of an Eastern hemisphere art or fashion may have been out and out, or only a substitution. The horse and his iron trappings were adopted out and out, but the iron arrow-point and the bead took the place of, were substituted for, the stone point and the porcupine quill. That this is so one may readily see by examining the method of attaching the one and of laying on the other.

Elimination in both cases is only half a study. There must be not only the taking out of the added part, but the restoration of the old. The whole round is *substitution* by the savage, *elimination* and *restoration* by the ethnologist.

The term American is not difficult to define, and here will apply to the Western hemisphere between 20° and 180° west from Greenwich. This includes a very small projection of eastern Asia occupied by Eskimo, and omits a few islands of the Aleutian chain lying in the Eastern hemisphere. Polynesia also will be excluded, although it lies entirely within the Western hemisphere, excepting the two colonies of New Zealand and Madagascar. The Northern continent lies for the most part west of the meridian of Washington, while South America is situated almost entirely east of it.

The two Boundary Lines

There are two acculturations attributed to the American aborigines: (1) That which has come to them in historic times, and (2) that which may have and is alleged to have come to them before the time of Eric the Red and of Columbus. The proof of

the first named is both historical and ethnographic; you may see the thing any day and you have the record. The proof of the second is ethnographic only; it relies on material and not on literary evidence; on language and tradition and social organization and not on the actual specimen.

In this paper attention will be paid only to the first named. To arrive at scientific conclusions regarding the old and genuine American culture it is necessary first to know accurately all the modern culture of all the stocks and tribes, and then to eliminate therefrom the elements that have got into it since the Caucasian intrusion, to put back those elements that contact destroyed and replaced. By such analysis and synthesis the hither boundary of the unsophisticated culture of the Western hemisphere may be staked out.

Practical Difficulties

The following difficulties confront the investigator:

I. The material objects upon which he has to rely are in cabinets and great museums. Sharp rivalry exists over the possession of old and rare and unadulterated material, consequently a certain percentage in every collection is fraudulent. If any one contends that this is not true of his material, let the student beware of him. Furthermore, there are no good catalogs of the great museums even. One must travel for years to see them, and it is not always convenient for the keepers to interrupt their own work.

II. Another considerable percentage, and this time of most precious things, is not properly described; the tribe and locality are wrongly inscribed or they are not given at all. Objects are often labeled from the point where they were procured and not from the place where they were invented or used originally. As between the aboriginal and the old world: 1, Old world things are ascribed to the new. 2, New world things are ascribed to the old. 3, Things from one part or tribe of the new are ascribed to another part or tribe. 4, Things made in one decade are ascribed to earlier or later decades.

III. A period of nearly four hundred years elapsed between the first and the latest business transactions of whites and negroes with American savages. It cannot be positively known by what instrumentality any one tribe after the first got its original con-

tact with the Iron Age. It is impossible to draw an ethnic map of the two Americas for any year or epoch. In Major Powell's ethnological chart he locates tribes and linguistic families at the time when they were first reported. In some instances there is a difference of three hundred years between two historians. As regards time of earliest acquaintance, the line of contact is greatly curved. Furthermore, the one who makes the first report finds that he has been anticipated by unrecorded intrusions.

IV. Accounts of early travelers, written in charming fashion for friends and royal patrons or as official and ecclesiastical reports, cannot always be checked off by comparison with the type material as in a laboratory. The tribes have disappeared or have been changed. The diagnosis is inadequate for the rigors of scientific method. Old pictures and descriptions abruptly leave us in doubt, and things are named in the current language of the day. The greatest patience is demanded in deciding just what an old author means or exhibits.

V. Since the days of Thomas Jefferson and his contemporaries the American aboriginal tribes have been moved from almost the entire Northern continent, and in their stead are to be seen Aryans (both blonde and brunette) from Europe, Asia and Africa; Semites, African Negroids, Chinese, Coreo-Japanese, Mongols, Tartars, and Malayo-Polynesians. The degree and the times of these removals are not known, but the number of native tribes in our day living lives unaffected by these intrusions is very small. Therefore, even the trained ethnographer, who takes photos and measurements of any tribes as he now finds them and collects the products of industry with scrupulous caution, is not dealing with extra-iron culture.

VI. The amount of iron in tools and manufactured products to be found in ethnic collections does not express the knowledge of iron possessed by each people. The collector, of his own instinct or obeying instructions, carefully avoids iron and iron-made things. He says, "They are white man's work; they are modern." So, though the genius of a collection might be ferruginous, it would be difficult to lay one's hand on the metal or its handiwork. Again, the collector himself obtains his material not for money, but for beads, knives, files, bars of iron, axes, and often for steel tools with which to make more objects for his Indian collection.

XUM

Varieties of Acculturation

It is absolutely necessary to remember that the intruders and teachers from the Eastern hemisphere did not all come upon the Indians with the same qualifications and appliances, with the same motives and momentum, and by the same roads of culture. In addition to those who had the mental and industrial prosperity of the savages in mind, there was an unconscious and therefore more effective pedagogy from the first. The crowned heads of Europe as well as the chartered companies expressed the liveliest sympathy in the instruction of the natives; but the hundreds of men who came to America, leading a folk-life at home not a great deal higher than that of the Indian, but different by reason of iron, without the slightest attempt to play the teacher, contributed substantial additions to the curriculum. It was not so much the governor, the general, the one in authority who married among the Indians and infected them with the Iron Age as it was the common soldier, the skilled artisan, the hunter, the fisherman, and the laborer. In these classes exist remarkably the individualities and idiosyncrasies of different nationalities.

The old voyagers to America were amply fitted out. Captain Luke Fox (1635) dwells on this:

> "I was victualled compleatly for eighteene months. . . . My carpenter was fitted out from the thickest boat to the pumpe nayle or tacket. The gunner from the sabor to the pistol, the boatswaine from the cable to the sayle twine, the steward and cooke from the caldron to the spoone."[1]

Every one knows the sailor and his ditty box, what marvels of folk-art the latter contains, and you may in any aboriginal collection from coast tribes pick out many specimens whereon he has been middleman from place to place.

As in the training of children, so in the training of peoples; some teachers encourage, others discourage; some succeed and advance culture, some fail and destroy the scholar. But the street education is always a success. Iron arrow blades, iron harpoon blades, iron fish hooks, iron needles, iron tools, such as knives, saws, axes, files, and chisels, were better than stone ones for the same purpose. These only encouraged and patronized

[1] Hakluyt, Hawkins' Voyage, 1847, p. x.

aboriginal life and art. Compelling men to drop all old pursuits and thoughts and to take up new ones or those of women and overworking them destroyed aboriginal life and frequently the people; but the silent education of European folk-life was never destructive.

In order to tabulate what each stock of Indians in America received in the way of implements and instructions from the newcomers it would be necessary to obtain the names of the nations participating, to know intimately their culture status, and what each expedition actually brought, officially and unofficially, especially the latter. Columbus is said to have offered to the natives trinkets and hawkbells; but in fact he, as well as his contemporaries, thrust before their gaze and fancy and desire all his varied equipment. The conquerors had the mining and metallurgic apparatus of their day. So a knowledge of artisan Europe is demanded in this elimination.

Intrusion of African Culture

To a very great extent the common people of Europe and natives of negroid Africa mingled their blood and influence with Indian blood and culture. The latter taught the Americans their dress, trades, language, customs, and myths.

In the first quarter of a century Spanish America was Latinized and had been widely occupied by slaves from Africa. The blood of the Dark Continent runs in many streams on the Western hemisphere, and wherever you see that you must expect speech and industry to have been similarly affected. These effects have not been studied out, but they will be found extensive.

Mr Justin Winsor informs me that as early as 1500 Columbus suggested to Philip the alternative of securing negroes to work the mines of Hispaniola. The king decreed that only could negroes be carried to America who had been born in Spain or brought there from Africa and christianized. In Herrera we read that Ovando, in 1505, solicited that no negro slaves should be sent to Hispaniola, for they fled among the Indians and taught them bad customs and never could be captured.[1] Yet

[1] Hist. de las Indias, dec. I, lib. v, cap. 12, quoted in Helps' "Spanish Conquest of America," chap. II.

the king wrote to Ovando in September of that year, promising to send more negroes. In 1508 the Spaniards introduced negroes from the Guinea coast into Haiti to work in their mines by the side of and with enslaved Indians. The slave trade was regularly authorized by Charles V in 1517, and up to the period when ethnographic studies began to be made systematically, certainly during the next three hundred years, not less than five or six millions of negroes were directly imported into America, a number equaling the entire native population in both hemispheres of the Western World.[1]

Every now and then a museum curator is startled by receiving, from Spanish America especially, something that vividly reminds him of the Dark Continent. The chances are even that it had its origin there, and the transfer to this side of the Atlantic is easily accounted for. The marimba, the national musical instrument in the Central American republics, played by Indians, is of negro origin, even the name having accompanied it. Negro servants and mechanics accompanied the expedition of Ursua and Aguirré down the Amazon from Peru to the Negro, up this river to the Orinoco, and to the sea. It has been lately stated that some of the Amazon tribes have wavy hair.[2]

In 1575 John Oxman joined the cimarrones or marooners, fugitive negroes in the mountains of Panama, where they had a habitation called Santiago de los Negros. The history of the Jamaica and the Guiana marooners is well known.[3] In 1593 Hawkins overtook a Portuguese ship of 100 tons bound for Angola to load with negroes for the river Plata. These negroes were marched from the headwaters of the Plata to Potosi to labor in the mines.[4] In the same year he mentions a tribe of Indians at Cape San Francisco, Ecuador, led by a molato. To this narrative might be added the formation of the tribes of black Caribs and the performances of the negro Estévan at Zuñi in 1539. But this one proposition will cover the ground: It seems impossible to find a single expedition from the picture of which the negro face does not protrude.

1 On the infusion of language see Brinton in American Antiquarian, vol. IX, no. 6.

2 Bollaert: Hakluyt, 28, 1861, 106 et seq.

3 Hawkins' Voyage: Hakluyt, London, 1847, p. 236. Dallas: History of the Maroons, 1803.

4 Hakluyt: London, 1847, pp. 94, 181.

Intrusion of Aryan Culture

In the sixteenth century the following branches of the Aryan family set out toward the New World: 1, The Spaniards, ostensibly for the whole of it west of the Portuguese boundary, really for the middle and the southern portions. 2, The Portuguese for Brazil. 3, The Dutch and French for South America, Canada, and Louisiana. 4, The English and Scandinavians for North America. 5, The Russians toward Alaska, overland through Siberia, taking with them Cossacks and various Ural-Altaic and Siberian contingents.

Frequently, we are told, it was the very dregs of these nations that first impressed their vices and diseases upon the native American life; but in this study it is important to emphasize the fact that these dregs were always from the artisan folk of their native homes, who came into most intimate relationship with savages having little prejudice against men who were lifted but slightly above them in total culture. The artisan folk were the Iron-age folk par excellence as against both the regulative class and the rustic class.

The Spanish intrusion into America as well as that of the Portuguese was for wealth, either of commerce or in the precious metals. They had with them two sets of teachers, two faculties, so to speak—the industrial and the spiritual—and the work of both was thoroughly done upon the pupils. Their ships were well provided with mechanics in wood, iron, and tackle. The southern Europeans of that day were handy workmen, as the relics of their crafts in old palaces and cathedrals testify. The iron tools offered to their native disciples could do excellent work.

At the outset the Indians were sold into captivity and iron put into the hands of every one forcibly. The first attempts to instruct them was the *repartimiento de Indios*, by which they were divided among the Spaniards, who had the profits of their labor without the right of property in persons. Next the *encomienda*, by which they were placed under the superintendence of the Spaniards. An *encomiendero* was appointed and bound to live in the district which contained the Indians of his *encomienda*, to watch over their conduct, instruct, and civilize them. They were then confided to missionaries and curates.[1]

[1] Cf. Mrs Metcalf, quoting Mr Poinsett: Ex. Doc., XVI Cong., sess. II; also Ind. Affairs, II, 409, and Humboldt's History of New Spain.

The chief agency, no doubt, in Latin America for making the Indians personally acquainted with industrial tools of iron was the "reductions" of Jesuits and Franciscans. The hoe formerly and aboriginally—if a sharp stick, a shell, or a bone may be dignified with that name—belonged to women. For a man to use one was a disgrace. It was the "reduction" and specially the lay brother there that interested men in agriculture, that made them personally acquainted with the ax, the saw, the file, the machete, either to effect more easily and rapidly old functions or to undertake those that were new or had been uncongenial.

In May, 1539, the Timucua Indians of western Florida were attacked by a company of Spanish horsemen; they fought with their bows and arrows, but having no armor two of them were killed. The rest got away and gave an alarm, which was spread from settlement to settlement by means of fires. This Spanish expedition proceeded northward into the Muskhogean, Uchean, and perhaps the Cherokee territory, subsisting on the country and putting its yoke on the natives. But it had been anticipated, for De Soto found in Cutifachique a dagger and beads that had belonged to Christians, evidently relics of De Ayllon's visits[1] in 1520 and 1524. Even De Ayllon had been preceded on the ground by the romantic Ponce de Leon in 1512.

This seems to have been the common experience after the first quarter of a century; the fame of the Spaniards had spread abroad and their coming forestalled. However, the endogamic family in the tribe acted often as a barrier to universal acculturation, and there are said to be tribes now living that the Iron Age has not even touched.

At the north the desire for fish and furs, the quest of the northwest passage, the purpose to enlarge the national domain and colonization to get away from persecution brought iron into the Western world, together with its allies and productions. So if you travel among the northern tribes you will there find both men and women engaged in old pursuits, getting better results with improved iron appliances. All of our museums are crowded with Indian collections from this area especially, but not one specimen in a hundred is genuinely aboriginal. Even an unsophisticated cabinet of unadulterated native ancient art is unknown.

[1] Gentleman of Elvas, Hakluyt, 1851, p. 58.

Eskimo and the Iron Age

Taking the Americans stock by stock, the Eskimo or Innuit have known iron nine hundred years, and since the days of John Cabot (1497) have been growing more and more dependent on it. It is difficult to find a bit of Eskimo work in which there is no trace of iron obtained from wrecks or in trade. Of the artistic carvings and patterns the best are without exception from areas where there has been most intimate association with Iron-age peoples. The shaping and decorating have been done with good steel tools, with constant borrowing from Old-world designs. The women quickly adopted the iron-blade fish-knife, awl and cutting knife, the iron needle and thimble. "Dr Rae said, on the authority of Professor Flower, that the form of head in the western Eskimo differs extremely from that to the east, the former being brachycephalic, the latter the very reverse. He had carefully studied Dr Simpson's description of the natives about Bering strait and could in no way reconcile it with his own observations of the Eskimo eastward of the Coppermine river."[1] No less the industrial products of the east differ from those of the west. The east Greenlanders resemble eastern world hyperboreans in some of their arts more than they do Alaskan Eskimo.

Nansen[2] calls attention to the Scandinavian settlement of Greenland from Erik Röde to the middle and close of the fourteenth century, when the Eskimo destroyed the Western settlement in 1341 and the Eastern in 1379. He thinks that this destruction was not due entirely to a war of extermination, but to a gradual absorption of the settlers into the Eskimo population. The profound modification of the dress and life of the Greenland Eskimo is in favor of this view. The arts are singularly reminiscent of Old-world specimens.

So far as my observations in the National Museum go, the Eskimo in prehistoric times made their harpoons, dart-barbs, and arrowpoints of bone and antler, but not of walrus ivory. There is not an ancient harpoon-head in the National Museum made of that material. The Eskimo did not aboriginally etch

[1] Journal Anthrop. Institute, London, 1889, XIX, p. 458.

[2] Across Greenland, London, 1890, II, p. 267. Also Tylor: Journal Anthrop. Institute, London, XIII, p. 349.

on bone and antler. All sorts of decorative carving are absent from their apparatus, though attempts have been made to trace their lineage to the cave-dwellers of France on that ground.

The Iron Age and the Indians

The Athapascan doubtless heard of the white man before he saw him, and saw him first not in his majesty, in the person of the commander, but in the person of the unprejudiced trapper and voyageur. He saw the French and then the English on the south and by and by the Russian and the Cossack on the west. The toboggan, the gun, the curved knife, beads and steel needles, and other appliances of daily life came in trade and tended greatly "*ad effeminandos animos.*" The birchbark canoe and the snowshoe, being better than anything the whites had to offer, held their own and were universally adopted, but they were enormously bettered by the curved steel knife and the ax.

The Algonquian stock, commencing with John Cabot, were taught in the industrial arts by French, Dutch, Swedes and English Puritans, Quakers, and loyalists, who contributed to their outfits iron arrowheads, knives, saws, files, drills, fish-hooks, and guns, and having cajoled them out of the knack of their native arts put them into close intimacy with the blacksmith, gunsmith, and the wood-worker. The steel ax came early to the aboriginal hand and suggested to it many kinds of work. The iron fist of war struck the defenseless body of the Algonquian severe blows; but he was taught to strike back and furnished with guns, tomahawks, and scalping knives. In this connection it is instructive to look over old bills of items furnished to these Indians, lists of articles demanded by them in trade, and the kind of skilled workmen sent to them to instruct them.[1]

Alongside of these bills it is also instructive to place the requisitions made upon the Indian Office for treaty supplies in the United States and Canada to see in what directions and how far the Indian has traveled into the white man's country.

"French Canadian traders were the first to penetrate the northern interior west of Hudson bay. Their most distant station was on Saskatchewan river, two thousand miles from civilization. These *coureurs des bois* were admirably adapted to

[1] Documentary History of New York, vol. x.

conciliate the Indians and form settlements among them."[1] The Hudson Bay Company was organized in 1670, and completed the reign of the 'sultan gun' in Canada. The curved or farrier's knife and the big flat file were members of the cabinet. Gookin says of the Massachusetts tribes: "They delight much in using knives, combs, scissors, hatchets, hoes, guns, needles, awls, looking-glasses, etc. They disuse their former weapons and instead thereof have guns, pistols, swords, rapier blades fastened unto a staff of the length of a half-pike, hatchets, and axes."[2] The "rapier blade fastened unto a staff" is peculiarly interesting, as it became the ubiquitous accompaniment of all horse-riding, buffalo-stabbing Indians of the plains.

The goods sold to the Algonquian tribes of Pennsylvania were cloth, linen, ready-made shirts, blankets, cottons, callimancos, thread, worsted, powder and shot, rifle-barreled guns, wampum, knives, colors, wire, brass kettles, silver and other buttons, buckles, bracelets, thimbles, needles, tinder-boxes, hatchets and other tools, nails, combs, and looking-glasses. The Indians wore their knives, hatchets, etc, on their necks at first (1609), but soon learned better.[3] No one, it is true, thinks of collecting such things for their own sake, but should we exorcise our museums of them, then the establishments would have to be closed.

In their southern border the Algonquian encountered negro slaves nearly two hundred years ago. What little remains to us of him is now mixed with negro blood, has lost nearly all of the aboriginal life and thought, and is in the daily practice of Iron-age industries. In 1607 the party of Captain Newport presented to King Arahatec and to Powhatan "gyftes of dyvers sortes, as penny knyves, sheeres, belles, beades, glasse toyes," all of them made of or with iron. Doubtless the Indians seized with their eyes a great many happy suggestions that lay in their imaginations for future use. John Smith says of the time when Wingfield was deposed and Ratcliffe elected in his stead (1607), "As we had no houses to couer us our Tents were rotten and our Cabbins worse than nought; our best commoditie was Yron which we made into little chisels."[4] Again, whatever Captain

[1] Cf. Bancroft, Native Races, etc., New York, I, pp. 26-34, for résumé of first contacts.
[2] Massachusetts Hist. Coll., 1st series, I, 152.
[3] Loskiel, Miss. of United Brethren, pp. 98–101; 123; also Heckewelder.
[4] John Smith's Works, Arber's reprint, London, 1884, p. 9.

Smith means, he says that in 1608 word was sent to Powhatan that he, Smith, had no idea of gunning for turkeys in Powhatan's country and scaring his wives and children, "but only to goe to Powhatan to seeke stones to make hatchets."[1] Again, in Smith we read:

"So the President finding his intention thus frustrated . . . held on his course for *Iames* Towne; we having in this Iornie (for 25 lbs. of copper and 50 lbs. of Iron and beads) kept 40 men 6. weeks . . . and daily feasted with bread, corne, flesh, fish and fowle. Every man having for his reward . . . a month's provisions; . . . and we delivered at Iames Towne to the Cape Marchant 279 bushels of corne."[2]

"Within this river" (Patawomeck), says Strachey,[3] "Captain Samuell Argoll, in a small river, which the Indians call Oeniho, anno 1610, trading for corn, obtained near four hundred bushells of wheat [maize], pease and beans, besides many kinds of furs, for nine pounds of copper, four bunches of leads, 8 dozen hatchets, 5 doz. knives, 4 bunches of bells, 1 dozen scissors, all worth not more than 40*s*. English." Spades, shovels, and hoes of iron, pins and needles, are elsewhere mentioned in this relation.

Of the Virginia Indians Strachey also remarks (1612):

"They are generally covetous of our comodityes, as copper, white beades for their women, hatchetts, of which we make them poore ones, of iron howes, to pare their corne ground, knives and such like."[4]

Again he declares that they gave up the hatchets made by thrusting a stone sharpened at both ends through a handle of wood and "by trucking with us have *thousands* of our iron hatchets, such as they be."[5]

The Iroquoian first saw the white invaders in 1504 and entered into relations with Jacques Cartier in 1534. Before that he was hunter, fisherman, and planter, and his masters found him extremely plastic. He threw away his rather rude bow and arrow for the gun, the tomahawk, and the butcher's knife, and he continued his former life successfully with the new appliances. Among a collection of Iroquoian objects are bullet-molds, flint

1 John Smith's Works, Arber's reprint, London, 1884, p. 37.

2 Ibid., p. 146.

3 Cf. Hist. of Travaile into Virginia Britannia. London, 1849, Hakluyt, vol. 6, p. 38.

4 The Historie of Travaile into Virginia Britannia, etc. London, 1849, Hakluyt Soc., vol. 6, p. 69.

5 Ibid., p. 106.

locks, scalping knives, Venetian beads, and apparatus for applying them, machine-made wampum, and not a stone implement save his pipe worked down with a steel file. The northern Iroquoian had three sets of teachers: (1) the French, not prejudiced against intermarriage; (2) the English, eager for the fur trade, and (3) the Dutch, who came to possess his land. They all brought him iron in trade, already manufactured, but never taught him to smelt or to forge it. He worked it cold, either upon grindstones, whose use he well knew as a stone-worker, or with the most obliging and useful file. The smith who went to live with him was a gunsmith. The northern Iroquoian was little if at all accultured by the negro. The southern Iroquoian, or Cherokee, learned the serviceableness of iron from Spaniards and from English. They also absorbed into themselves negro blood and traditions. Fortunately for them, in the early days of the Republic they were taught peaceful pursuits and prepared for the forcible removal of their nation largely to their present home. They learned to master iron as well as to be mastered by it and to master with it, and are now absolutely in the Iron Age, living under a constitution framed after ours, and their daily anxiety is concerning the iron horse speeding across their land.

The natives of the Southern States of the Union are now the civilized tribes of Indian Territory, the Seminoles of Florida, some reservations of those who were not removed, and smaller tribes and stocks that disappeared. It is sufficient to say that even the Seminole now dresses like a Highlander and has abandoned his native arts. Among the civilized tribes it is difficult to trace the lineaments of the former life, and in the Carolina mountains the industrial life is thoroughly mongrelized.

On the plains of the Great West the buffalo commenced his course of extinction when the white man gave to the Indian the iron arrowhead, the steel-blade lance, the pony and the rifle. No one will pretend that the Crow warrior, mounted on his pony, having on his head a war-bonnet with trailer reaching to the ground, on his body a coat and breeches and moccasins covered over almost solid with beads, his horse caparisoned with headstall, collar, and crupper of gorgeously beaded and fringed buckskin, is an aboriginal picture. There is much to be eliminated.

XUM

The Russian Iron Age Begins

In 1578 began the conquest of Siberia by the Russians, and in 1639, about fifty years afterward, Andrëi Kopiloff, a Kossack leader, with a small party on snowshoes and on horseback encamped on the shores of Okhotsk sea. Then the Caucasian race for the first time obtruded its terrible visage into the life of the northeastern Pacific and commenced to interrupt, divert, and control the movements and the destinies of the inhabitants.

In 1643 Vassili Posharkoff set out from Yakutsk with 132 men, followed the course of the Amoor to its mouth, and thence proceeding north and westward along the coast returned to Yakutsk by a different route and one direct from Okhotsk sea. Here was another intrusion upon the Pacific coast civilization. The horses of Kopiloff were the first return thither of that animal whose ancestors long ago mayhap had come this way from America.[1]

In 1650, pursuing their search for fossil ivory, the Cossacks settled down in the Chukchi country, with headquarters at Anadirsk. The almost superhuman efforts and daring, the intense and varied suffering of these explorers was an object-lesson to the native populations. It is important in the study of this contact with America to note well the bloody wars of the Cossacks with the Chukchi, which, instead of stimulating commerce with America, as has been intimated, must have operated precisely the other way.[2]

The voyage of Bering in 1727–1730 opened the eyes of the Eskimo on European men and forms of industry. There can scarcely have been a St Lawrence islander henceforth whose mind and skill were in nowise affected thereby. In the same year the expedition of Fedorof is said to have reached Norton sound. That would be interesting if confirmed, as St Michaels has been the center of the most modified Eskimo art—indeed, it may be safely said the source of that refined art which in museums is labeled "Eskimo." But it was in the second voyage of Bering that his lieutenant, Chirikof, visited the southern land of the Eskimo and of the Aleuts in July, 1741, and became acquainted with the delicate otter fur which was to act as the

[1] See H. H. Bancroft's Works, xxxiii, p. 20, and Native Races of the Pacific States vol. i, p. 28.

[2] Ibid., index *sub voce* "Chukchi."

lure *a fronte* for subsequent Russian enterprise. Says Bancroft:[1] "As the little sable had enticed the Cossack from the Black sea and the Volga across the Ural mountains and the vast plains of Siberia to the shores of Okhotsk sea and the Pacific, so now the sea-otter lures the same venturesome race out among the islands and ice and fog banks of the ocean."

The first to engage in hunting sea-otters and other fur-bearing animals east of Kamchatka was Emilian Bassof, 1743–1749, who journeyed as far as Copper island. From this time on until the purchase by the United States the Russian ships on the Pacific ocean mixed up the ethnographic material of all areas. There are in the U. S. National Museum undoubted Eskimo fish-hooks from Honolulu and cups in carved cocoanut-shells from Sitka. The Aleut kaiaker's hat is made after Asiatic pattern and overlaid with walrus ivory objects, in the style of the Giliak's.

Early contact with the Aleuts is thus described by Bancroft:[2]

"On the 24th of September, 1745, Chuprof and his company landed on the Aleutian island of Agatoo. They met some natives, to whom they gave tobacco and pipes and received a stick ornamented with the head of a seal carved in bone. Then the savages wanted one of the muskets and when refused they became angry and attempted to capture the party by seizing their boat. Finally Chuprof ordered his men to fire, and for the first time the thundering echoes of musketry resounded from the hills of Agatoo."

The Russians introduced into the Aleutian islands the custom of taking hostages. Sometimes for wicked purposes women were thus borne away. On the first regularly authorized adventure, Andraï Tolstykh took from Attoo some of the relatives of the chief as hostages, who were also to serve as interpreters and guides to other islands.[3] This, however, is very far from being the first time that native Americans, whether by compulsion or to get rid of troublesome guests, guided the Iron-age man to further acquisitions and conquests.

The Iron Age on the Pacific Coast

The Indian tribes of the Pacific coast demand closer attention. For acculturation they may be divided into: (1) Russian In-

[1] H. H. Bancroft's Works, XXXIII, p. 99.
[2] Ibid., p. 102.
[3] Ibid., p. 128.

dians, (2) British and American fur-trading Indians, (3) No man's Indians, in California and Oregon, and (4) Jesuit and Franciscan Indians, south of San Francisco bay.

The T'lingit, Haida, and other British Columbia coast tribes have iron and Pacific ocean products from the Spanish and the English, but chiefly from the Russians and from fishing vessels. It is very old among them, and I have no hesitation in saying that they carve now better than anciently.

The Haida Indians of Queen Charlotte islands were first brought face to face with white men in 1778, when Captain Cook landed on the northern portion. The islands were formally seized for the English crown in 1787 by Captain Dixon. Whatever rumors of the Anglo-Saxon race had previously reached them, this is the first known obstruction it threw in the way of the intellectual stream of their savage existence. We must not forget the northward extending excursions of the Spaniards on this coast from Maldonado (1588) and Juan de Fuca (1595), nor of Sir Francis Drake still earlier (1579).

At Nootka sound Captain Cook (1778)[1] found the natives wearing ornaments of thin brass and iron as pendants in their noses; likewise several pieces of iron fixed to handles somewhat resembling chisels. He exchanged for the various articles they brought knives, chisels, nails, looking-glasses, buttons, pieces of iron and tin or any kind of metal. They rejected glass beads and cloth. The natives were thieves; had sharp instruments in their possession, and the instant the backs of the crew were turned cut a hook from the tackle or a piece of iron from a rope.

In 1850 and 1851 the first whites went to settle in the Klamath and Trinity valleys, California. Up to that date the only iron had been secured in barter from the Hudson Bay Company's agents in British Columbia. No iron or copper is found in the kitchen-middens. Captain William E. Dougherty, U. S. A., thinks the fur-traders came in about 1845 or 1846, bringing hatchets, knives, beads, and trinkets. Practically the tribes lived in the Stone Age until 1851. Captain Dougherty says that even now an old Indian will not skin an eel with an iron knife, using a chipped stone every time.

South of San Francisco bay another regime began. Indeed there were two of them, the state regime and the church regime.

[1] A Voyage to the Pacific ocean, etc., in 1776–1780. London, 1784, II, p. 213.

The former early pressed itself on the imagination and experiences of the Indian to absolutely, at once, and violently to destroy him; the other visited him to save him—his body for the church and its services and his soul for heaven. We are now speaking of industrial life. The Indian man possessed few attractions for the Spaniard. He could not work and had to die. The woman was about as far ahead in all things as the poor women of Spain, so she went on grinding maize, spinning cotton, and rearing children with Spanish fathers. Hence a large percentage of the present population of all Spanish America. The Mexican potter now constructs his vessel or his group on European models and revels in bull-fights, gamblers, and folk-portraiture. He is not a Mexican and he is not a European, but a new type of man in which the new dominates the old and the old is the slave of the new.[1]

The peon system in Central America is a queer pedagogy for the native. It embraces much of old Castilian life, a large proportion of North African Moorish life, and through Mohammedan influences elements of Egyptian, Arabic, and old Semito-Hamitic apparatus and processes. Mr Dinwiddie saw a Papago boy in Arizona on horseback drawing water with a cowhide bag built around a big hoop. The bag was attached to the end of a rawhide line working over a single wheel above the well. The other end of the line was fastened around the boy's waist, and he held himself on the beast by grasping the pommel of the saddle. This is an out-and-out Semito-Hamitic custom, and could scarcely have originated with the boy *de novo*.

The Mediterranean Iron Age

Many times the story of the Spanish conquest in Middle and South America has been told in all its exciting and often painful detail. I do not remember to have seen an attempt to mark and measure its pedagogic effect on the various native populations in their common folk-life. In looking at members of a host of tribes, one is struck with the orientalism of the hat, the rebozo, the poncho, especially of the sandal, facsimile of the foot-gear of

1 On the extreme activity of the Franciscans in California and the variety of occupations introduced by them see Langsdorff's Voyage, London, 1814, II, p. 160; for the methods and effects of the Iron Age in New Mexico consult Bandelier, Archæol. Inst. of America, ser. III, 1890, chap. III, p. 188 et seq.

all the historic peoples about the Mediterranean. To complete the picture, the donkey, the ox, with yoke against the horns, the clumsy wooden cart, and the gaily caparisoned horse are always in view.

I am tempted to ask you to review the polytechnic curriculum of Cabeça de Vaca, Coronado, Cortez, Balboa, the Pizarros, Orellana, Aguirré, the seekers after the gilded man, the Jesuit and Franciscan reductions, stretching from San Francisco, California, to the La Plata, and the unprejudiced acculturation of blood, of language, and activity that has gone on in Latin America for three hundred and seventy-five years, or nearly twenty generations. The most cautious ethnologists agree that mixing of blood means more or less mixing of social economy, language, and arts. The following names are applied in Peru as characterizing mixed blood, founded on Indians, negroes, whites, and Chinese:

Creoles.—Native-born children of Spanish blood.
Mulatto.—One-half of white and of black blood.
Cuarteron.—Our quadroon, one-fourth negro, three-fourths white.
Requinteron.—Octoroon, one-eighth negro, seven-eighths white.
Trigenio.—One-sixteenth negro, fifteen-sixteenths white.
Zambo.—Indian and negro, all proportions.
Cholo.—Indian and white.
Metis.—One-fourth Indian, Chola, and white.
Dudosa.—One-eighth Indian, Metis, and white.
Chino-Cholo.—Chinese and Chola.

The modern aboriginal industrial life of Latin America differs profoundly from that of the non-Latin America. This is due to the following causes: 1, Physiographically and in every other natural respect the regions differ. The line of the desert pueblo country divides the two, and also separates two cultures. 2, The aborigines, conditioned by these environments, were made to differ in person, in stimuli, in resources, and in contacts with great world movements. Before the coming of the whites there was much differentiation. 3, The contacts with Caucasians have helped to put these aborigines wider apart. The Europeans from Latin states did not send the same kind of teachers, the same apparatus, and they did not teach the same lessons. If a by-street in Madrid had been dropped on Mexico or Peru, a narrow block from southern Paris into Canada, and a small section of east London had found its way into the United States to

act as educators, it will at once be appreciated that the results would differ in each case.

Gonzalo Pizarro took with him in his expedition from Quito (1539–'42) to the Amazon four thousand Indians laden with arms, supplies, and all things requisite for the service, such as iron, hatchets, knives, ropes, hempen cords, and large nails, four thousand head of swine, and a flock of llamas, the latter carrying part of the baggage.[1] Proceeding down the head streams of the Amazon, Gonzalo came to tribes that fed on maize and dressed in cotton clothes. Here he determined to build a brigantine; he set up a forge for making nails, burned charcoal, made houses, cut down trees with steel axes, and completed and launched a built-up boat on the eastern slope of the Cordilleras in 1539, all in sight of the natives.[2] This vessel proceeded on its journey with a portion of his party, while the others went by land, cutting their way with axes. The brigantine, under command of the traitor Francisco de Orellana, continued down the river, silently announcing the Iron Age to all the tribes on the Amazon as far as its mouth.

After this Pizarro made an inventory. Of the four thousand Indians that set out, three thousand perished miserably; the iron literally pierced their souls. The others went to school to the new teachers, serving Pizarro *in extremis*, according to Garcilaso,[3] like sons in their hardships and privations, searching for herbs and roots and wild fruits, frogs and serpents, and other wretched food; but before they had gone many leagues in returning the other thousand died. However, with arquebus and crossbow, with ax and bill, the Spaniards continued to teach the stocks among whom they were passing.

When Orellana was descending the Amazon, somewhere about the mouth of the Rio Negro, an Indian woman told him that in the interior there were many men like the Spaniards and two white women with a chief, who had brought them down the river.[4] The Rio Negro and the Orinoco are made one by the Cassiquiare uniting their headwaters.

In the expedition of Aguirré (1561) on the lower Rio Negro he came upon an Indian house in which he found a piece of a

1 Garcilaso, Roy. Com., Hakluyt, vol. 24, 1859, p. 4.
2 Ibid., 1859, p. 6.
3 Ibid., p. 15.
4 Herrera, dec. VI, Hakluyt, vol. 24, 1859, p. 32.

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sword-guard, nails, and little things made of iron.[1] It would be interesting to trace up the sword-blade.

In Guiana, says Strachey (1610), "thirty of the people with their canoa will be hired for one hatchet to row where they are commanded for a whole month and sell a hundred weight of good cassava biscuit for a three-penny knife."[2] The hatchet here mentioned may be the omnipresent machete.

Acuña (1639) gives a good illustration of acculturation among the Omaguas in Ecuador. He says that they were the most intelligent tribe on the river and that they owed these advantages to some of their number who had lived peaceably in the government of the Quijos, who, being ill-treated, descended the river until they met the great body of their nation and, introducing among them some things they had learned among the Spaniards, the tribe became somewhat more civilized.[3] He found Indians near the mouth of the Negro with "axes, knives, and mattocks," bought of Indians who received them from the Dutch in 1638.

While the iron-made brigantine, the arquebus, the crossbow, and the trader in iron were revolutionizing the psychology and industries of the native races, there came another pedagog upon the scene, the Christian missionary. Father Cristoval de Acuña says of his journey down the Amazon (1639) that they crossed those lofty mountains on foot, which, with the liquor of their veins, feed and sustain that great river; they voyaged on the waves to where, spread out into eighty-four mouths, it pays its mighty tribute to the sea.[4]

The effect of the Iron Age in causing extensive migrations may be seen in the history of the Tupinambás, on the Amazon, at the mouth of the Madeira. Their prehistoric home was Pernambuco, on the Brazilian coast (8° x 35° S. W.). Fleeing the severity of the Portuguese, they crossed all the tributaries of the Amazon until they arrived at the headwaters of the Madeira. There the Spaniards offended them and they descended the Madeira to its mouth.[5]

Wallace[6] describes the shipbuilding at Tómo on the upper Rio

1 Bollaert, Hakluyt, vol. 28, 1861, p. 100.
2 Historie, etc, in Hakluyt, vol. vi, p. 88.
3 New Discov., Hakluyt, vol. 24, 1859, pp. 95, 109.
4 New Discovery of the Amazon: Hakluyt, vol. 24, 1859, p. 60.
5 Acuña: New Discovery, etc, Hakluyt, vol 24, 1859, p 118.
6 Travels on the Amazonas, p. 236.

Negro, Brazil. When Brazil and Venezuela were under Portuguese and Spanish rule, shipbuilding yards were established. Indians were employed under naval architects in the construction of inland and coast vessels. These establishments were broken up, but the Indians had learned an art and taught it to their children. By eye and hand alone they will frame and finish a vessel of a hundred tons or more with no other tools than ax, adze, and hammer.

Schomburgk (1841)[1] says:

"We have met our domesticated hens from one end of Guiana to the other. . . . When Pizarro anchored on the coast of Tumbez he sent to King Guaynacapa two hogs, four hens, and a cock. . . . The Indian set great value upon the cock, the crowing of which (tétong in Macusi) teaches him the time of night."

Von den Steinen[2] may have found ironless tribes on the Shingu (1893), but he did not leave them thus, for he bartered a machete for two canoes of the kind that the Bakairi make.

Conclusions

From this very hurried sketch, the details of which would fill many pages, it will be seen that the native American mind and activities were profoundly and in some instances radically modified by the Iron Age.

I. The Iron Age that modified America was the conservative folk-age, the Middle Age as distinguished from the Renaissance, which replaced the old in progressive Europe. It is almost impossible, therefore, as one looks over a collection of Americana to decide positively whether he is regarding the unadulterated Western hemisphere, or mediæval Europe, or native Africa, or some happy combination of these.

II. In the New world during four centuries, as in the Old world, the activities, the whole life, of the native peoples were (1) partly such as belong to a common humanity; (2) such as arise through a partnership and cooperation between any group of human beings and their environment, and (3) such as came to them from foreign teachers living in the Iron Age of Europe. This contact has been in certain particulars universal, overpow-

[1] Schomburgk: Hakluyt, 1848, p. 55.

[2] Unter den Naturvölkern Zentralbrasiliens, p. 56. See also Musters, On the Races of Patagonia, Journal Anthrop. Institute, London, 1872, vol. 1, p. 198.

ering, and efficient. Old things are passing away and must all succumb. There is scarcely a tribe on this continent that never heard of iron; there are tribes of Americans that preserve only a vestige of native life. Even the archeologist is often in doubt regarding buried specimens. Shell-heaps, mounds, caves, and cemeteries often hide iron-made products among the goodly stuff, exciting a reasonable doubt concerning the probable authorship of the works themselves.

Today it is regarded certain that a cemetery is pre-Columbian, but tomorrow the mummy pack reveals a page from a printed Spanish book. While I am speaking to you the cliffs of Arizona are believed to conceal only the vestiges of native activity, but tomorrow they may reveal something else. There is no archeologist who will deny this statement.

It is a mistake to think that all good art is old or that all old art is good. Basketry and pottery, not depending on any Iron-age help, were better in the past because the progressive and skillful were borne on to the higher pursuits; but ivory-carving, wood-carving, snowshoes, stone-work, and all other things made by or with the aid of iron are better everywhere. The technique is better; the motive, the underlying conception, and composition may be incalculably worse, because the Iron-age man took away the old and gave nothing for it.

I desire to insist with some emphasis upon the statement that the study of these transitions is the precious portion of American history, that the adulterated aboriginal product reveals to our gaze the living processes by which men have always progressed to higher life. The war bonnet of eagle feathers on red stroud-ing, lined with Chinese silk, and made up with a Howe sewing-machine is in the National Museum. The history of many years and many industrial and intellectual revolutions is there recorded.

As I have shown elsewhere, the arts of a people pass through their utilitarian evolutions into artistic and mythical manifestations. The period of flux and of becoming is the first named, the period of stability, of inflexibility, of crystallization is the ethical or the mythical stage in the art. It is a matter of common experience to the museum curator to find the beadwork copying the forms and fastenings of quillwork, though that is not needful; to find the iron blade with an eye for a helve, lashed

onto the end of a forked stick with rawhide; to discover that plates of German silver not only replace disks of pretty shell, but that they are worn similarly. Therefore, by the aid of the modern that which remains of the ancient may be restored. It may be stated as a tolerably safe rule that each addition of Iron-age elements was to take the place of something made of stone, bone, shell, horn, ivory, antler, seeds, feathers, wood, etc, in preferreous times. After all, to those who study intensively any one culture area or people the distinctly new looks like a stranger, it obtrudes itself, it is a new patch on an old garment.

In view of these facts the time seems to me to have arrived for a more decided coöperation among those who have in charge public and private collections. To him who lives, week in and week out, among the witnesses of former cultures their voices become familiar and there grows a kind of instinct in him to distinguish the old from the new. In the same way that must be a very poor collection that does not contain one genuine old piece. The next thing is to get them all acquainted; to establish a clearing-house of knowledge about them. I would plead for fraternalization among ethnographical establishments. Many of our enigmas are caused by the absence of knowledge concerning things that exist in abundance elsewhere. I would also plead for a cooperative spirit among active workers. As the great modern inventions are the result of many special minds organized into a higher creative unit, so shall we solve the problem of culture by the same process.

Abel Hovelacque.—Dr Abel Hovelacque, the distinguished French anthropologist, whose death occurred February 22, was born at Paris, November 14, 1843. In 1876 he became professor and in 1889 honorary professor of the School of Anthropology, of which he was appointed a director in 1890. In 1886–'87 he was president of the municipal council of Paris; in 1890 was elected to the presidency of the Society of Anthropology of Paris, and from 1889 to 1894 was a deputy of the Seine.

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BOOK REVIEWS

The Number Concept, its Origin and Development. By Levi L. Conant, Ph. D. New York, Macmillan & Co., 1896. 218 pp., 12°, $2.00.

The title of this work might lead the reader to suppose that it is principally mathematical, but the treatment adopted by the author is anthropological. It is a study of the evolution of the idea of number in primitive conditions and the survivals of early forms in later stages of culture.

Beginning with the methods of counting which prevail in savage tribes and, by way of comparison, among children, the author passes to the limits of numeral systems. In the former he finds the fingers to be the usual natural tallies. With regard to limits, the widest variation occurs. The author judiciously observes: "The high limit to which some savage races carry their numeration is far more worthy of remark than the entire absence of the number sense exhibited by others of apparently equal intelligence."

Two chapters are occupied with the origin of number words. While he does not concede that all numeral words are derived from digital sources, "that all above 2, 3, or at most 4, are almost universally of digital origin we must admit." This seems too positive a statement, especially as the author does not appear to have considered the origin of the derivation of the Indo-Germanic and Semitic numerals. He says of the former, "all traces of their origin seem to have been lost." This is not the opinion of such Aryan students as Lepsius, Scherer, and Rumpelt, and the interesting identification of *one* and *two* with *I* and *thou* deserved at least a mention. On page 99 he offers a list of the meanings of the lower number-words, assigning "the probable meaning of any one of the units." It is suggestive, but does not contain either the origins from the personal pronouns or from adverbs of place (*here, there*), which are almost certainly at the root of some of the terms for the first and second units.

The chapter on "miscellaneous number bases" discusses the binary, ternary, senary, octonary, and duodecimal scales. He refuses to believe that the octonary is to be regarded as, in the Aryan race, the predecessor of the decimal base. He is inclined to favor the duodecimal scale. "It is the scale of civilization, just as the quinary, decimal, and vigesimal scales are the scales

of nature." He quotes only one, and that a doubtful instance of the duodecimal scale, among savage tribes. On page 207 he makes the observation: "It must not be forgotten that no races save those using the base of 10 have ever attained any great degree of civilization, except the ancient Aztecs and their neighbors;" yet the Babylonian sexagesimal base, 60, to which he occasionally alludes, is considered by most students to have been duodecimal—that is, 5 x 12, not 6 x 10—and such was the civilization of the Babylonians of nine thousand years ago that our methods of dividing time and space, our religion and our laws, we owe in large part to them. The book closes with special chapters on the quinary and vigesimal systems.

Professor Conant's pages testify everywhere to the methods of a conscientious, unbiased, and accurate student. He has limited his investigations to the cardinal numbers only. In some future edition we hope he will include the remaining numeral series, the ordinals, iteratives, multiplicatives, partitives, distributives, and specificatives, as they have been classified by grammarians. The origin of sacred number series is also worthy his attention.

D. G. Brinton.

John Eliot's First Indian Teacher and Interpreter. Cockenoe-de-Long Island and the Story of his Career from the Early Records. By William Wallace Tooker. New York, Francis P. Harper, 1896. 60 pp., 2 pl., 8°. $2.00.

Cockenoe-de-Long Island is the queer-sounding polyglot name of a Long Island Indian who was captured while fighting with the Pequots against the British colonists. According to his biographer, William Wallace Tooker, of Sag Harbor, Cockenoe was so called from the Massachusetts Indian verb *kukkinneau*, "he interprets." Cockenoe became prominent through the fact that the missionary John Eliot, who in 1646 began to deliver sermons in the Indian vernacular, made his acquaintance about that time; he then acted as the famous apostle's first Indian teacher and interpreter. The last mention we find of him is in a Montauk deed of conveyance to the inhabitants of East Hampton, Long Island, dated August 3, 1687.

The little volume is of such interest to the ethnologist and historian that it seems a pity the edition of the work is limited to 215 copies. It is a beautiful specimen of book-making.

A. S. Gatschet.

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NOTES AND NEWS

DR KEANE'S "ETHNOLOGY."—*Editor American Anthropologist:* In the May number of the ANTHROPOLOGIST Mr Keane demands that I withdraw the statement, made in my review of his *Ethnology*, that that work "pursues the same plan, treating the same subjects in nearly the same order," as my *Races and Peoples*, published in 1890.

Instead of withdrawing this statement, I shall substantiate it.

My *Races and Peoples* begins with two lectures—the first on the physical traits of man, the second on his mental traits. Keane's *Ethnology*, after a brief preliminary on definitions, begins with two chapters—the first on the physical traits of man, the second on his mental traits. The third lecture in my book takes up the following subjects in the order given: Unity of Man, Antiquity of Man, Man in Glacial and Preglacial Times, Varieties of Man, their Development and Classification. In Mr Keane's book these subjects are treated, chapters IV–IX, in the following order: Antiquity of Man, Man in Glacial and Preglacial Times, Unity of Man, Varieties of Man, their Development and Classification. Of course, as I stated in my review, he "expands" in various directions. In my lectures, V–IX, I treat the primary varieties of man as four, excluding the Malayan, or brown, variety as such. In his part II Mr Keane treats the primary varieties of man as four, excluding the Malayan, or brown, variety as such. The four retained are the same—the white, black, red, and yellow varieties.

Among the numerous works which have appeared on this science in the last six years, I challenge the production of any other than Mr Keane's which follows my scheme nearly so closely. I should have been gratified with this if it had been acknowledged; as it is, I leave the inference to the reader.

Mr Keane denies that he borrowed from my work the term "Eurafrican." I know that I coined that geographic term for use in my lectures in 1888. It may have been devised before, and, unlike Mr Keane, I shall be glad to concede priority if he can show it in any book antedating my own.

D. G. BRINTON.

RACIAL DEGENERACY IN AMERICA.—In my article entitled "Racial Degeneracy in America: Goitre and Dwarfing," which was published in the *University Medical Magazine* January, 1896, I said:

Racial degeneracy may be defined as non-resistance to influences inimical to the existence of the race. The individual who cannot resist the disease-producing causes which are afloat, whether they be germs, climate, or whatever their nature, is physically degenerate. If the subject has lost all power of resisting the immoral tendencies which threaten the race, he is morally degenerate. A cretin is intellectuall degenerate. A dwarf is a degenerate because he has lost the faculty of growth.

Goitre is a disease of racial degeneracy. It will only be found in those races in whom development has come to a standstill, as the mixed races of South and Central America, the Cagots, some inferior layers of the Scotch, the mixed mulatto race, and the degenerate Indians of America, etc.

Leprous races are degenerate, as the Eta race of Japan, some Central and South American races, the low-caste Hindoos, the poorer element of the Norwegian people. These diseases—leprosy, goitre, dwarfing, cretinism—are evidences of the dying out of a race.

Referring to these conclusions, Dr J. Goldschmidt, for twenty-six years superintendent of the Funchal Leper Asylum, Madeira, in a letter to me dated March 20, 1896, says:

What you say about pre-Columbia syphilis and leprosy and that about racial degeneracy in America is of the highest interest and greatest importance for the history of diseases and for the theory of evolution.

You remember what Darwin says in his "Origin of Species" about the degeneration of the rabbits in the island of Porto Santo, some sixty miles to the north from Madeira and discovered a year before the latter island. Soon after the discovery the ordinary rabbit was introduced into Porto Santo, and the still existing race is quite dwarfish compared to its ancestral continental prototype. . . .

As to tuberculosis and leprosy amongst the Indian tribes of North and South America, are not alcoholism, syphilis, and tuberculosis the causes of the rapid disappearance of the aborigines in North America? Has leprosy any importance in this question of extinction? On the other hand, are the cases of leprosy amongst the southern Indians not overwhelmingly more numerous than those amongst the northern? This question has a great importance to me, especially as regards the natural disappearance of epidemics.

ALBERT S. ASHMEAD, M. D.

ABSTRACT OF MINUTES

February 4, 1896.—The 244th regular meeting of the Anthropological Society of Washington was held at Builders' Exchange Hall, under the auspices of the Joint Commission, President Gardiner G. Hubbard in the chair. The annual address of the retiring President, Major J. W. Powell, on the "Seven Illusions of Science," was delivered.

February 18, 1896.—The 245th regular meeting was presided over by Vice-President Dr Frank Baker. The election to active membership of Dr Charles H. Alden, Assistant Surgeon General U. S. A., Mr Benjamin R. Catlin, and Mr George N. Glover was reported. Professor J. Ormond Wilson, from the Auditing Committee, reported the Treasurer's accounts correct. Professor Lester F. Ward read a paper entitled "Sociology in its Relation to Ethics," which was discussed by Major J. W. Powell and Rev. J. McBride Sterrett. A paper on "The Heredity of Society as Illustrated in the United States" was read by Mr J. H. Blodgett.

March 3, 1896.—The 246th regular meeting, the President, Professor Lester F. Ward, in the chair. George M. Sternberg, Surgeon General U. S. A., read a paper on "Vivisection, its Objects and Results," which was followed by a general discussion of vivisection in its relations to ethics and human welfare by Dr Frank Baker, Dr D. G. Salmon, Dr C. W. Stiles, and by Mr Kennedy of the Anti-vivisection Society.

March 17, 1896.—The 247th regular meeting, President Ward in the chair. The election as active members of Rufus N. Tryon, Surgeon General U. S. N., and Mr Newton Scott Scudder, United States National Museum, was announced. Mr G. K. Gilbert read a paper on "The History and Archeology of Wilde, Colorado," with exhibitions of specimens. A symposium on the "Results of Last Year's Researches in Archeology and Anthropology," being a series of eight minutes' reviews of the work done in the several fields of research, were presented by Mr J. D. McGuire, on "Primitive Drilling;" Dr Thomas Wilson, on "Work in my Department of Prehistoric Anthropology;" Mr Walter Hough, on "American Pottery and Armor;" Professor O. T. Mason, on "Primitive Land Travel and Transportation;" Professor W J

McGee, on "Beginnings of Organizations;" Mr F. W. Hodge, on "Pueblo History and Clan System;" Dr J. W. Fewkes, on "Studies in Tusayan Archeology;" Dr Cyrus Adler, on "Oriental Archeology."

April 7, 1896.—The 248th regular meeting, President Ward in the chair. The election of Mr Wallace W. Hite to active membership was announced. Dr Arthur McDonald delivered an address on "Psycho-neural Measurements of Human Beings, with Illustrations, Instruments, and Experiments," which was briefly discussed by Professor Ward. Dr Thomas Wilson read a paper on "Marriage in Nature and in Law."

April 21, 1896.—The 249th regular meeting, President Ward in the chair. Dr J. Walter Fewkes, a corresponding member, was elected to active membership. Dr Fewkes read a paper on "Two Ruins Recently Discovered in the Red Rock Country, Arizona," illustrated by lantern slides. Discussed by Major J. W. Powell and Professor W J McGee. Mr J. D. McGuire presented a paper on the "Classification and Development of Primitive Implements," which was discussed by Professors McGee and Ward.

May 5, 1896.—The 250th regular meeting, Vice-President Dr Frank Baker in the chair. Dr D. S. Lamb read a paper entitled "A Study in Ears," which was discussed by Dr Baker, Professor Seaman, and the speaker. Colonel Charles H. Alden, Assistant Surgeon General U. S. A., presented a paper on "The Identification of the Individual, with Special Reference to the System used in the Office of the Surgeon General of the United States Army." Discussed by Dr Thomas Wilson, Dr Baker, and Colonel Alden.

J. H. McCormick, M. D., *Secretary.*

Telugu Rain Superstition.—If it rains continuously for three or four days, and the female members of a Telugu family are thereby prevented from leaving the house for marketing, a small female child is sent out naked into the rain with a burning piece of wood in her hand, which she has to show to the rain. The rain is then supposed to cease.—*Indian Antiquary, December, 1895.*

XUM

A MONTHLY BIBLIOGRAPHY OF ANTHROPOLOGIC LITERATURE

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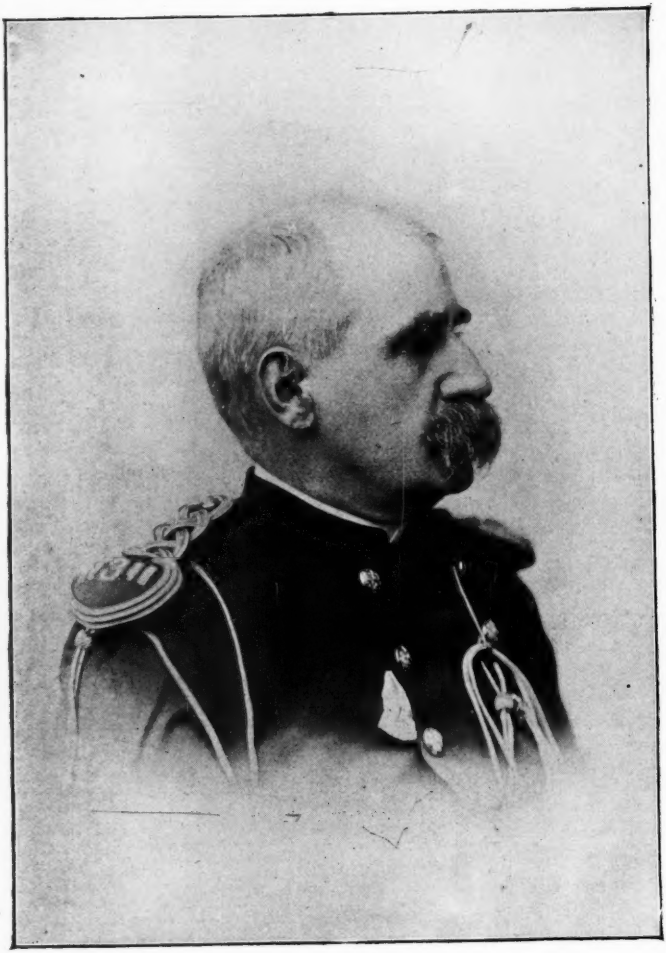
LEFT-HANDEDNESS. — With regard to right-handedness, discussed in the last number, let me say that the incident regarding the chipping of arrows was somewhat on this wise: Mr Cushing, when he was assisting Dr Rau some twenty years ago, came across a lot of spearheads rhomboidal in section, and conceived that they were held under the left thumb in chipping, the point outward. That being admitted, the fact forced itself on me that a large proportion of them must have been chipped with the left hand. But Dr Brinton will find in my paper on the "Throwing Stick" (1884, U. S. N. M.) that only two of all of these implements in the National Museum are left-handed. I have studied about one hundred in all, with the result that three are left-handed. As each stick belongs to a different man, while stone spearheads are frequently made in large numbers by the same maker, the throwing stick is the better test. Again, I have in hand nearly a hundred scrapers in handles with finger grooves, and there is not a left-handed one among them. The conclusion is that, *quod sciam*, no savage woman was ever left-handed.

O. T. MASON.



Sincerely Yours —

Philip D. Burke